Technical Data Sheet – FLEX S-FSZC-SF7 Conductive Silver Ink

FlexS-FSZC-SF7 is a high-performance, low resistance thermoplastic resin-based polymer thick film silver ink designed for improved adhesion to difficult substrates like ITO and glass, and improved thermal stability in challenging environments. It can be used as a printed bus bar silver ink, or standard printed circuit ink for use in harsh environments. It is also fully compatible with SunRay's ZTACH® ACE, anisotropic (Z-axis) conductive epoxy and other ECA's.

Our proprietary manufacturing process delivers improved conductivity at lower silver content, without sacrificing all other key performance parameters required for printed conductive inks.

This ink is designed to have reduced silver migration, extended screen residence time and exceptional curing profiles depending upon the type of equipment in use.

TYPICAL UNCURED PROPERTIES	
Appearance	Silver
Viscosity (Brookfield DV1, SC4-28 spindle, 6RPM, @25°C)	Typ. 50,000 cP +/- 10%
Solids (%) (175°C for 15 minutes in a box oven)	Typ. 69% +/- 2%
Density (ASTM D1475)	Typ. 2.32 g/cm^3
TYPICAL CURED PROPERTIES	
Typical Substrates	PET, ITO coated PET or glass, PI, and other temperature stable, common printed electronics substrates
Resistance (box oven dried print on ST505 PET film)	Typ. ≤ 0.016 Ω/sq/mil
Adhesion (ASTM D3359 - Cross Hatch)	5B
Abrasion Resistance (ASTM D3363 – Pencil Hardness)	3H
TYPICAL RECOMMENDED PROCESSING GUIDELINES	
Dry Film Thickness	6-10 µm
Screen Mesh & Type	190-325 - Polyester of Stainless Steel
Screen Emulsion	4-20 µm Capillary Film
Squeegee	60-90 Durometer-Sharp
Screen Residence Time	4+ hours with temperature and humidity management
Cure Conditions[1]	15 minutes @135˚C
Thinning/Clean-up	DBE Solvent

STORAGE, USE & DISPOSAL, SAFETY & HANDLING	
Unopened containers can be stored for up to 6 months at or below 21˚C	Use with adequate ventilation. This product contains metallic particles.
Viscosity of blended material will vary during the pot life period	Avoid contact with skin and eyes
Dispose of properly	If skin contact occurs wash immediately with soap and water

NOTE: In handling and using commercial organic solvents, the safety precautions recommended by the solvent suppliers should be observed. A safety data sheet for this material is available upon request. Information presented in this product data sheet data sheet is considered reliable, but conditions and methods of use, which are beyond our control may modify results. Before adopting our products for commercial use, the user should confirm their suitability. In no case should recommendations or suggestions for the use of our products be understood to sanction violation of any patent. "SUNRAY SCIENTIFIC MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS(ED) OR IMPLIED, CONCERNING THE SUITABILITY OF THESE MATERIALS FOR USE IN IMPLANTATION IN THE HUMAN BODY OR IN CONTACT WITH INTERNAL BODY FLUIDS OR TISSUES OR FOR ANY OTHER USE. These materials are not designed or manufactured for use in implantation in the human body or in contact with internal body fluids or tissues. SunRay Scientific has not performed clinical testing of these materials for implantation. SunRay Scientific has neither sought, nor received, approval from the use of these materials in implantation in the human body or in contact with internal body fluids or tissues."

[1]*Cure profiles are guideline recommendations. Cure conditions may vary based on application requirements, curing equipment, oven loading and actual oven temperatures. Contact SunRay Scientific Engineering for further conditions.*